

Remarks

I. Status of Claims

Claims 1-5 and 7-11 are currently pending in the application. Claims 6 and 12 have been canceled. Claims 1 and 8 are independent. By entry of this amendment, new claims 13 and 14 will be added. Support for the new claims can be found at page 8, first full paragraph of the specification.

Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Buchner *et al.* (DE 196 49 434 C1) (hereinafter "Buchner") in view of Yi *et al.* (USP 6,586,123) (hereinafter "Yi"), and further in view of Reher *et al.*

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buchner in view of Muchinc *et al.* (USP 6,558,824), in view of Yi, and further in view of Reher.

The Applicant respectfully requests reconsideration in view of the following remarks.

II. Pending Claims

The Office Action rejects claims 1-5, 7 under 35 U.S.C. 103(a) over Buchner *et al.* (DE 196 49 434 C1) in view of Yi *et al.* (US 6,586,123) and Reher *et al.* (US 5,215,834).

As stated in the Office Action, neither Buchner nor Yi, either individually or in combination, teach or suggest the introduction of a cooling medium into a passage within the fuel cell and changing the temperature of the cooling medium when measuring the voltage of the fuel cell. The Examiner relies on the disclosure of Reher to remedy this deficiency.

As described in prior responses, Bruchner is directed to determining gas leaks between the anode and cathode space of PRM fuel cells using gas pressure to determine if gas leaks exist between two gas spaces within the fuel cell.

Yi is directed to a variable stoichiometry fuel cell that maintains a flow rate of air in response to a load current to maintain an air "stoichiometry."

While Reher is directed to a battery thermal control system. Reher is clearly directed to batteries, not fuel cells. The teachings of Reher are directed to maintaining a battery within a specified temperature and voltage range in order to optimize battery life and performance. Specifically, Reher teaches sensing the battery voltage and storage temperature, and operating an

air flow means (fan) when the voltage of the battery exceeds a certain level (see col. 2, lines 48-52; col. 5, lines 26-46). This is done to maintain an optimal temperature range for battery operation and also to maintain an optimal voltage range.

In contrast, claims 1 and 8 recite, in combination with other features, "...introducing a cooling medium into a passage of the fuel cell...changing a temperature of the cooling medium when measuring the voltage of each cell." (emphasis added). According to the claims, the cooling medium is introduced into the fuel cell for the purpose of changing an operating state of the fuel cell, i.e. a temperature of the fuel cell. The voltage of each cell of the plurality of cells that comprise the fuel cell is measured when the fuel cell operates at the changed temperature. Therefore, a temperature dependency of the amounts of cross-leak can be determined. See page 8 in the specification.

However, the manner in which the combined device of Bruchner, Yi and Reher allegedly operates is quite different from that recited in the claims.

Because the batteries of Reher do not have the claimed passage, the cooling medium (i.e., air) is introduced into a box accommodating the battery. In short, because the purpose for introducing the cooling medium into the claimed fuel cell and the structures (battery) are different from each other, it would not have been obvious to one of ordinary skill to at the time of the present invention to combine Buchner et al., which is directed to the fuel cell, with Yi and Reher, which is directed to the battery.

Applicants respectfully submit that Bruchner, Yi and Reher, either alone or in any combination, do not disclose or suggest all of the features recited in the claims 1-5 and 7, in particular, the feature of changing a temperature of the cooling medium when measuring the voltage of each cell.

Applicants respectfully submit that the Office has not made a *prima facie* case of obviousness for the above reasons, and request withdrawal of the rejections of claims 1-5 and 7.

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buchner in view of Muchinc et al (USP 6,558,824), in view of Yi, and further in view of Reher.

The Muchinc patent is directed to a system for removing accumulated water in a fuel stack by applying suction. It does not overcome the above deficiencies with respect to the

combination of Bruchner, Yi and Reher. Accordingly, Applicants request withdrawal of the rejection of claims 8-11.

Claims 13 and 14 recite a level of detail, in combination with the independent claims, not disclosed or suggested by the applied prior art, and therefore an indication of allowable subject matter is requested.

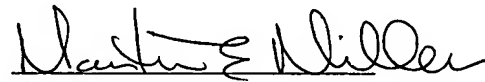
III. Conclusion

In light of the above discussion, Applicants respectfully submit that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance.

The Examiner is invited to contact the undersigned at (202) 220-4420 to discuss any matter concerning this application. The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

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Martin E. Miller
(Reg. No. 56,022)

KENYON & KENYON LLP
1500 K Street, N.W., Suite 700
Washington, D.C. 20005
Telephone: (202) 220-4200
Facsimile: (202) 220-4201